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10/707,612

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Daniel W. Cushing

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EXAMINER

PIZIALI, ANDREW T

ART UNIT

PAPER NUMBER

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**Please find below and/or attached an Office communication concerning this application or proceeding.**

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**BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES**

Application Number: 10/707,612  
Filing Date: December 24, 2003  
Appellant(s): CUSHING ET AL.

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Joshua Broitman  
For Appellant

**EXAMINER'S ANSWER**

This is in response to the appeal brief filed 2/14/2008 appealing from the Office action mailed 3/9/2007.

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**(1) Real Party in Interest**

A statement identifying by name the real party in interest is contained in the brief.

**(2) Related Appeals and Interferences**

The examiner is not aware of any related appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

**(3) Status of Claims**

The statement of the status of claims contained in the brief is correct.

**(4) Status of Amendments After Final**

No amendment after final has been filed.

**(5) Summary of Claimed Subject Matter**

The summary of claimed subject matter contained in the brief is correct.

**(6) Grounds of Rejection to be Reviewed on Appeal**

The appellant's statement of the grounds of rejection to be reviewed on appeal is correct.

**(7) Claims Appendix**

The copy of the appealed claims contained in the Appendix to the brief is correct.

**(8) Evidence Relied Upon**

2004/0219855	TSOTSIS	11-2004
5,319,003	GOMEZ	6-1994

Definition "nonwoven fabric" Complete Textile Glossary, Celanese Acetate, 2001.

Definition "fabric" Complete Textile Glossary, Celanese Acetate, 2001.

**(9) Grounds of Rejection**

The following ground of rejection is applicable to the appealed claims:

***Claim Rejections - 35 USC § 103***

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1, 2, 4 and 5 are rejected under 35 U.S.C. 103(a) as being unpatentable over US Patent Application Publication 2004/0219855 to Tsotsis in view of USPN 5,319,003 to Gomez et al. (hereinafter referred to as Gomez).

Regarding claims 1, 2, 4 and 5, Tsotsis discloses a two-layer composite material formed from a substantially continuous nonwoven polyphenylsulfone substrate material and a plurality of unidirectional long glass fibers substantially embedded within the substrate material (see entire document including [0022], [0023], [0032], [0036], [0040] and Figures 3 and 3a). Tsotsis discloses that a substrate material may be bonded to one or both sides of the unidirectional fabric [0040] and may be infused with resin to form a substantially continuous material [0045]. Tsotsis discloses that the fibers can be taken from a creel containing multiple spools of (long) fibers [0022]. Tsotsis discloses that the polyphenylsulfone substrate material may comprise continuous fibers [0029].

Tsotsis is silent with regards to specific glass fibers, therefore, it would have been obvious to look to the prior art for conventional glass fibers. Gomez provides this conventional teaching showing that it is known in the resin/fiber composite art to use s-type or e-type glass fibers (see entire document including column 2, lines 60-68 and column 3, lines 28-31). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to make the glass fibers from s-type or e-type glass fibers, as taught by Gomez, motivated by the expectation of successfully practicing the invention of Tsotsis. It is noted that the s-type and e-type glass fibers inherently have a melting temperature above the melting temperature of a polyphenylsulfone substrate (see current specification [0027]).

Considering that the composite taught by the applied prior art is substantially identical to the claimed composite in terms of a polyphenylsulfone substrate material with substantially embedded long e-type or s-type glass fibers, it appears that the structure taught by the applied prior art inherently possesses the claimed properties.

Regarding claim 2, Tsotsis discloses that glass fibers may comprise a plurality of unidirectional long glass fibers [0022].

Regarding claims 4 and 5, the applicant claims that the composite material is for use in a specific component. Considering that the composite taught by the applied prior art is substantially identical to the claimed composite in terms of substrate material and embedded fibers, it appears that the prior art structure is capable of performing the intended use.

**(10) Response to Argument**

Tsotsis discloses a composite material comprising a substantially continuous non-woven thermoplastic polyphenylsulfone substrate (12) and a plurality of unidirectional glass fibers (14) (see [0020], [0022], [0023], and Figure 3). Tsotsis discloses that the substrate material may be melt-bonded to one or both sides of the unidirectional fibers (see [0040]). The appellant defines the melt-bonded to both sides embodiment as a two-layer composite material with fibers laminated within the substrate (see [0020], [0021], and Figure 17 of the current specification). Tsotsis illustrates the fibers as long (see Figure 3) and discloses that the fibers are long fibers wherein it is disclosed that the fibers are taken from a creel containing multiple spools of (long) fibers (see [0022]).

Tsotsis is silent with regards to specific glass fibers, therefore, it would have been obvious to look to the prior art for conventional glass fibers. Gomez provides this conventional teaching showing that it is known in the fiber reinforced composite art to use s-type or e-type glass fibers (see column 2, lines 60-68 and column 3, lines 28-31). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to make the glass fibers from s-type or e-type glass fibers, motivated by the expectation of successfully practicing the invention of Tsotsis and because it has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability and desired characteristics. *In re Leshin*, 125 USPQ 416. It is noted that the s-type and e-type glass fibers inherently have a melting temperature above the melting temperature of a polyphenylsulfone substrate (see [0027] of the current specification).

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Considering that the composite taught by the applied prior art is substantially identical to the claimed composite in terms of a polyphenylsulfone substrate material with substantially embedded long e-type or s-type glass fibers, it appears that the structure taught by the applied prior art inherently possesses the claimed average allowable heat release property and the claimed post processing capability.

Regarding the claimed intended use, a recitation of the intended use of the claimed invention must result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art. If the prior art structure is capable of performing the intended use, then it meets the claim. In the current case, Tsotsis discloses that the composite may be used in the aerospace field (see [0002]), the composite is substantially identical to the claimed composite, and the appellant has failed to show, or attempt to show, that the composite taught by the applied prior art is incapable of performing the intended use. Therefore, the composite taught by the applied prior art appears to be inherently capable of being used in translucent, flame-resistant components.

The appellant asserts that that one skilled in the art would not combine the teachings of Tsotsis and Gomez because Tsotsis comprises thermoplastic material while Gomez comprises thermoset material. The examiner respectfully disagrees. Tsotsis and Gomez are each in the field of applicant's endeavor, which is fiber reinforced composites.

The appellant asserts that Tsotsis teaches a composite comprising a non-woven fabric substrate (an assembly of textile fibers in a random configuration) while the current claims require a composite comprising a non-fabric substrate. The examiner respectfully disagrees. Although the prosecution history of the current application makes clear that the currently claimed “nonwoven” substrate refers to material that is not woven (negative limitation), and while it is clear that the “non-woven” substrate layers of Tsotsis are non-woven fabric layers (an assembly of textile fibers in a random configuration), the current claims do not exclude a fabric substrate. Rather, the current claims simply exclude a woven fabric substrate. Since a non-woven fabric is not a woven fabric, Tsotsis teaches the claimed substrate.

**(11) Related Proceeding(s) Appendix**

No decision rendered by a court or the Board is identified by the examiner in the Related Appeals and Interferences section of this examiner’s answer.

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

/Andrew T Piziali/  
Primary Examiner, Art Unit 1794

Conferees:

/Carol Chaney/  
Supervisory Patent Examiner, Art Unit 1794

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